

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

LISTING OF CLAIMS

Claim 1 (Original): A threading tap for cutting threads in blind holes, comprising an elongated body defining an axis of rotation and including axial front and rear end regions, the front end region including a threading portion having teeth defining a helical thread-cutting structure, and at least one helical flute formed in an outer periphery of the body and interrupting the thread-cutting structure, the at least one flute comprising interconnected flanks having exposed surfaces that are steam tempered.

Claim 2 (Original): The threading tap according to claim 1, wherein a helix angle of the flute relative to the axis is between 46° and 55°.

Claim 3 (Original): The threading tap according to claim 2, wherein the helix angle is between 48° and 50°.

Claim 4 (Original): The threading tap according to claim 3, wherein the helix angle is 48°.

Claim 5 (Original): The threading tap according to claim 1, wherein the thread-cutting structure is chamfered at a rear portion thereof.

Claim 6 (Original): The threading tap according to claim 5 wherein the chamfered portion forms an angle in the range of 8°-11° relative to the axis.

Claim 7 (Original): The threading tap according to claim 1 wherein a rake angle of the thread cutting structure is in the range of 8°-16°.

Claim 8 (Original): The threading tap according to claim 1, wherein the body comprises high-speed steel.

Claim 9 (Original): The threading tap according to claim 8, wherein the high-speed steel has a hardness of 63.5-66.5 HRC.

Claim 10 (Original): The threading tap according to claim 1 wherein the body comprises powder steel material having a hardness of 64.5-67.5 HRC.

Claim 11 (Currently Amended): The threading tap according to claim 1, wherein an exposed surface of the thread-cutting structure is defined by a physical ~~vapour~~ vapor deposition coating.

Claim 12 (Currently Amended): The threading tap according to claim 11, wherein the coating comprises one of TiCN, TiN, ~~TiAlN~~ TiAlN, ~~TiAlCN~~ TiAlCN, CrN, or ~~TiAlN/WC/C~~ TiAlN/WC/C.

Claim 13 (Original): The threading tap according to claim 1 wherein the at least one flute consists of three flutes distributed substantially evenly about a circumference of the body.

Claim 14 (Original): The threading tap according to claim 1 wherein the at least one flute consists of four flutes distributed substantially evenly about a circumference of the body.

Claim 15 (Original): A method of manufacturing a threading tap suitable for cutting threads in blind holes, including the following steps:

- A) selecting a blank comprising an elongated body defining an axis of rotation and including axial front and rear regions;
- B) forming at least one helical flute in an outer periphery of the body, the at least one flute comprising interconnected flanks having exposed surfaces; and
- C) steam tempering the exposed surfaces.

Claim 16 (Original): The method according to claim 15, further including forming teeth on the body to define a helical thread-cutting structure interrupted by the flute, and coating the teeth by physical vapor deposition.

Claim 17 (Currently Amended): The method according to claim 16 where the physical vapor deposition is performed using one of TiCN, TiN, ~~TiAlN~~ TiAlN, ~~TiAlCN~~ TiAlCN, CrN, or ~~TiAlN/WC/C~~ TiAlN/WC/C.

Claim 18 (Original): The method according to claim 16 wherein the step of forming at least one helical flute comprises forming at least three flutes.

Claim 19 (Original): The method according to claim 15, wherein the at least one flute is formed such that a helix angle of the flute relative to the axis is between 46° and 55°.

Claim 20 (Original): The method according to claim 15, wherein the at least one flute is formed such that angle of the flute is between 48° and 50°.

Claim 21 (Original): The method according to claim 15 wherein the at least one flute is formed such that the helix angle of the flute is 48°.

Claim 22 (Original): The method according to claim 16 wherein the thread-cutting structure has a chamfer at a rear section thereof.

Claim 23 (Original): The method according to claim 22, wherein a taper angle of the chamfer is between 8° and 11° .

Claim 24 (Original): The method according to claim 16 wherein the thread cutting structure has a rake angle within the range of 8° - 16° .

Claim 25 (Original): The method according to claim 15, including forming a connector portion at the front region of the body.

Claim 26 (Original): The method according to claim 15, wherein the blank comprises a high-speed steel having a hardness of 63.5-66.5 HRC.

Claim 27 (Original): The method according to claim 15 wherein the blank comprises a powder steel having a hardness of 64.5-67.5 HRC.

Claim 28 (Original): The method according to claim 15, wherein the steam tempering is performed at a temperature between 500°C and 540°C .

Claim 29 (Original) The method according to claim 15, wherein the steam tempering is performed with nitrogen (N_2) and carbon dioxide (CO_2).

Claim 30 (Original): The method according to claim 15, wherein the steam tempering is performed with nitrogen (N_2) and water steam (H_2O).